U.S. EPA's Small Systems Research Capabilities

What help is available for small drinking water systems?

U.S. EPA's National Risk Management Research Laboratory provides alternatives for treating, distributing, and maintaining drinking water quality to meet the regulatory requirements of the Safe Drinking Water Act. Through studies conducted by the Water Supply and Water Resources Division in Cincinnati, Ohio, the Agency is enabling small system operators to make better decisions on the selection and use of treatment technologies to supply consistently safe drinking water to their users. Guidance resulting from these small system studies has been published in the Small Drinking Water Systems Handbook, A Guide to "Packaged" Filtration and Disinfection Technologies with Remote Monitoring and Control Tools", EPA/600/R-03/041, May 2003.

The U.S. EPA Water Quality Management Branch is performing small systems research studies on various filtration (bag, cartridge, sand, and ultrafiltration) and disinfection technologies (on-site chlorinators) at the U.S. EPA's T&E Facility in Cincinnati, Ohio. These studies are investigating the removal of turbidity and microorganisms such as bacteria, viruses, and protozoa from drinking water sources. Research results have assisted in the development of applicable treatment regulations including the Enhanced Surface Water Treatment Rule. Future research will be conducted on point-of-use/point-of-entry systems for removal of microbiological agents and perchlorate. However, the use of point-of-use devices for microbial contaminants is specifically prohibited by the current Safe Drinking Water Act. Only public water systems with filtration technologies achieving 99% *Cryptosporidium* removal are allowed under the current regulation.

The U.S. EPA Treatment Technology Evaluation Branch is in the process of conducting arsenic technology demonstrations at twelve small communities in New Mexico, New Hampshire, Michigan, North Dakota, Minnesota, Arizona, Idaho, Nevada, and Maryland. Various media, ion exchange resins, and system modifications are being tested and compared to assist small communities with arsenic reduction in their well water supplies. U.S. EPA's Environmental Technology Verification Program has completed short-term performance verification studies of four commercially-ready arsenic treatment technologies. An in-house research program has focused on three fundamental technologies: adsorptive media, iron removal process, and ion exchange. Ongoing and future research will be conducted on arsenic treatment process evaluation and optimization, and the management of arsenic treatment residuals.